

CAMP

FETCH!

with
Ruff
Ruffman™

Great for camp and
afterschool settings

Everything you need
to lead FETCH! activities
with kids ages 6-10



kid-tested
kid-approved



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Activities and Leader Notes

AIR

Blast Off! Use air power to send a straw rocket flying high. Whooooosh!	9
Sky Diver Design a parachute that floats safely to the ground— no crash landings allowed!	13

CHEMISTRY

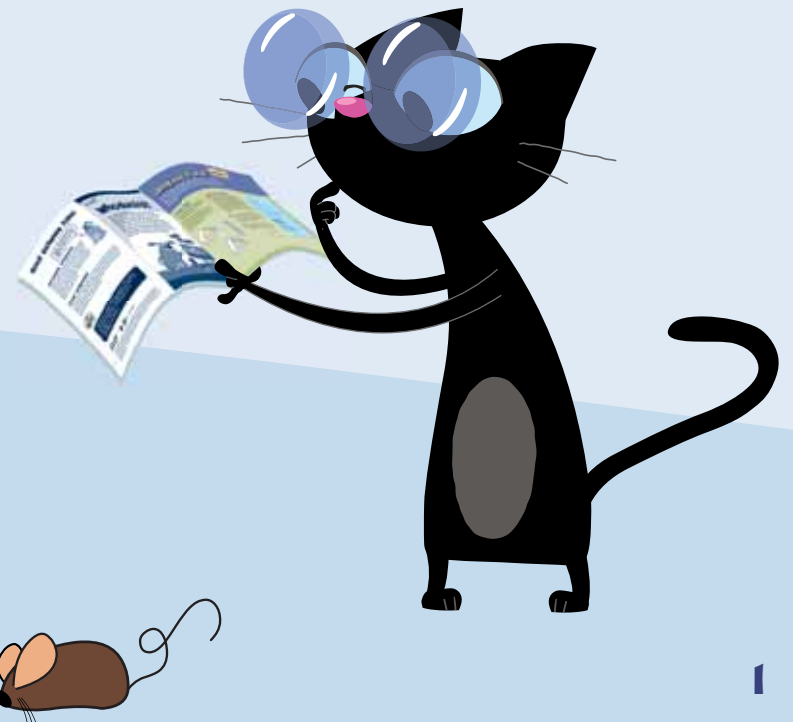
Tempest in a Teacup It's hot! It's cold! It's bubbly! You won't believe the wild chemical reactions you can create in a cup!	17
Copper Cleanup In this crazy cleaning experiment, can you make pennies sparkle with . . . ketchup? . . . baking soda? . . . or cola?	21
Potion Commotion Water and oil don't mix. But watch what happens when you add the fizz factor! Double, double, toil and trouble	25

SIMPLE MACHINES

Action Figure Create a Jumping Jack puppet with levers and string. Then make it dance!	29
Pinball Wizard Make a pinball machine that can shoot a marble and send it zigzagging down an obstacle course	33

ADDITIONAL RESOURCES

More FETCH! Challenges Find the complete list of FETCH! activities organized by theme, all available online	37
Reproducible Data Sheets Photocopy these data sheets for the chemistry activities: <i>Tempest in a Teacup</i> , <i>Copper Cleanup</i> , and <i>Potion Commotion</i>	41



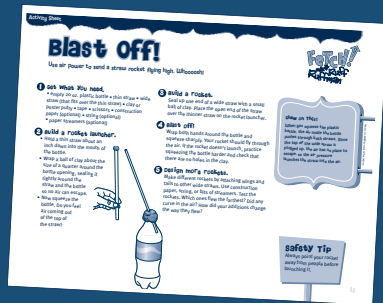
The Kids' Activity sheet

Each of the guide's challenges has a two-sided activity sheet. First, copy both sides for each kid in your group. Then fold the sheet on the dotted line to make a booklet.



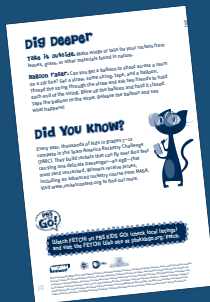
Front Cover

- greeting from Ruff



Inside Spread

- materials list
- step-by-step procedure
- kid-friendly explanation of the science idea



Back Cover

- extension activities
- real-world connection

How to Use this guide

Camp FETCH! is meant for anyone who wants to lead hands-on science activities with six- to ten-year-olds: camp counselors, afterschool providers, teachers, librarians, museum staff, and others. Whether you're experienced or new at this, this guide has everything you need to lead science activities that encourage kids to explore, ask questions, and have fun! This guide features seven activities and focuses on three different science themes: air, chemistry, and simple machines.

Kids' Activity sheets

The activity sheets have step-by-step instructions and explain science in everyday terms that kids can understand. These activities use inexpensive and easy-to-find materials and will take roughly 45 minutes to complete.

Leader Notes

Each activity is accompanied by Leader Notes that describe how to carry out an activity from start to finish. They point out any advance preparation needed, offer advice on where kids may need help, and include discussion questions (and answers!).

Additional Leader Resources

To further support activity leaders, the guide includes a section on general tips and strategies for leading activities (pp. 4–5), and steers readers to our free and easy-to-use online training (pbs.org/parents/fetch/training).

Running a FETCH! Club

The guide also includes instructions on setting up a FETCH! Club (p. 6), which allows you to offer a series of FETCH! activities with a group on an ongoing basis.

Using the complete Online collection of FETCH! Activities

In addition to the seven activities in this guide, there are more than 30 other FETCH! activities available online, each of which has been tested and approved by real kids. The complete list, divided into twelve science themes, can be found at the back of this guide, on pp. 37–40. All the activities are available at: pbs.org/parents/fetch/activities/activities.html

customizing camp FETCH!

Camp *FETCH!* can be used in lots of ways—here are a few suggestions.

You can offer **FETCH!** activities as:

- A one-time activity
- A **FETCH!** Week, with one activity a day
- A day-long **FETCH!** Festival, featuring many activities
- A weekly series of activities (e.g., a different **FETCH!** activity every Thursday)
- A two-day activity (e.g., making ice cream the first day; inventing different ice cream flavors the next), like those found on p. 39.

choose activities by:

- **Theme:** Organize your activities by science theme—see the twelve science themes listed at right. You might, for example, combine the two activities about air found in this guide with the four other air-related activities available online.
- **A La Carte:** Select a broad sampling of activities in different areas of science from the 30+ choices online. Or let the kids choose!

Fetch Science Themes

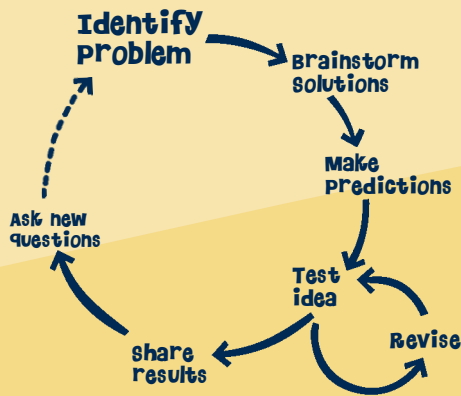
See pp. 37–40 for the complete list of activities or download them at pbs.org/parents/fetch/activities/activities.html

Air
Animals/Habitats
Chemistry
Human Body/Mind
Light/Perception
Math
Motion and Energy
Science Games
Simple Machines
Sound
Structures
Water/Buoyancy



TIPS for Leading FETCH! challenges

Help your kids explore, work together, develop scientific ways of thinking, and have lots of fun!



The FETCH! approach to solving a problem

Each challenge's procedure and discussion questions reinforce these seven problem-solving steps. They are presented on the FETCH! *Solve a Problem* sign (p. 8).

Before a FETCH! Meeting

- Do the activity yourself so you'll know what to expect and where kids may need help.
- Gather any materials that you don't already have on hand.
- Make copies of both sides of the activity sheet for each kid in your group. See the kids' activity sheet overview on p. 2.

During a challenge

- Encourage collaboration, rather than team-against-team competitions.
- Give all the instructions before distributing materials—including any necessary safety instructions. Kids tend to stop listening once materials are in their hands!
- Visit each group as they work. Ask kids to describe what they're doing and to share their ideas. By explaining their plan to you, kids may make a connection that wasn't clear earlier.
- As kids progress through an activity, they will be doing steps outlined on the FETCH! *Solve a Problem* sign (p. 8). Identify each step as they do it. Tell kids that when they follow these steps, they're using the same process scientists and engineers use to solve problems.

After a challenge

- Gather as a group and have kids share what they discovered while doing the activity. Telling or showing others what they've achieved gives kids a sense of their own resourcefulness and creativity.
- Encourage kids to take their challenge sheets home. They can share what they did with their families and try the activities again.



Using FETCH! With Kids of All Ages

FETCH! activities are ideal for kids ages 6–10. Here are some tips for working with the younger and older kids in this age group.

Younger kids:

- May not be able to manipulate objects easily. Try the activity yourself to determine what steps or materials you may need to help them with. If possible, work in small groups and recruit additional adult volunteers to provide extra support.
- May be less likely to share with others. Supply extra materials so kids can work individually.
- May have difficulty understanding abstract ideas. Provide concrete examples whenever possible.

Older kids:

- May finish a challenge sooner. Suggest they move on to the extension activities featured in the Dig Deeper section of each activity sheet.
- Sometimes prefer to learn on their own or from peers. Offer opportunities for kids to test their ideas and to explore on their own.
- Can be excellent role models for younger kids. If they finish early, invite them to assist younger kids.

Learn More about Leading Science Activities

Take the FETCH! Hands-On Science Training at:
pbs.org/parents/fetch/training

This free online workshop offers techniques and strategies to engage kids in science, a slide show of a leader guiding kids through a FETCH! activity, and a chance for participants to chart their progress.



Set UP a FETCH! Club

Kids like clubs! They enjoy belonging to a group that does fun activities together, features membership cards, and shares the excitement of accumulating points toward a common goal (and prize!).

Membership cards. Make FETCH! membership cards (see next page) and establish a place where kids can find their cards at the start of each meeting and return them when it's over.

Points. At the end of each meeting, gather as a group and announce that it's time to award points. Kids earn FETCH! points when they answer the five questions located at the end of each set of Leader Notes under "Award Points." When you hear an acceptable answer, award 50 points to the entire group. This reinforces the idea that kids are part of a club that values teamwork.

Questions for Points. All *Camp FETCH!* activities in this guide have Leader Notes that supply questions, but some of the other FETCH! challenges found online do not. If you choose to use activities that do not include questions in the Leader Notes, you may need to prepare these questions yourself. As you come up with your own questions, think about what you'd like kids to learn from the activity.

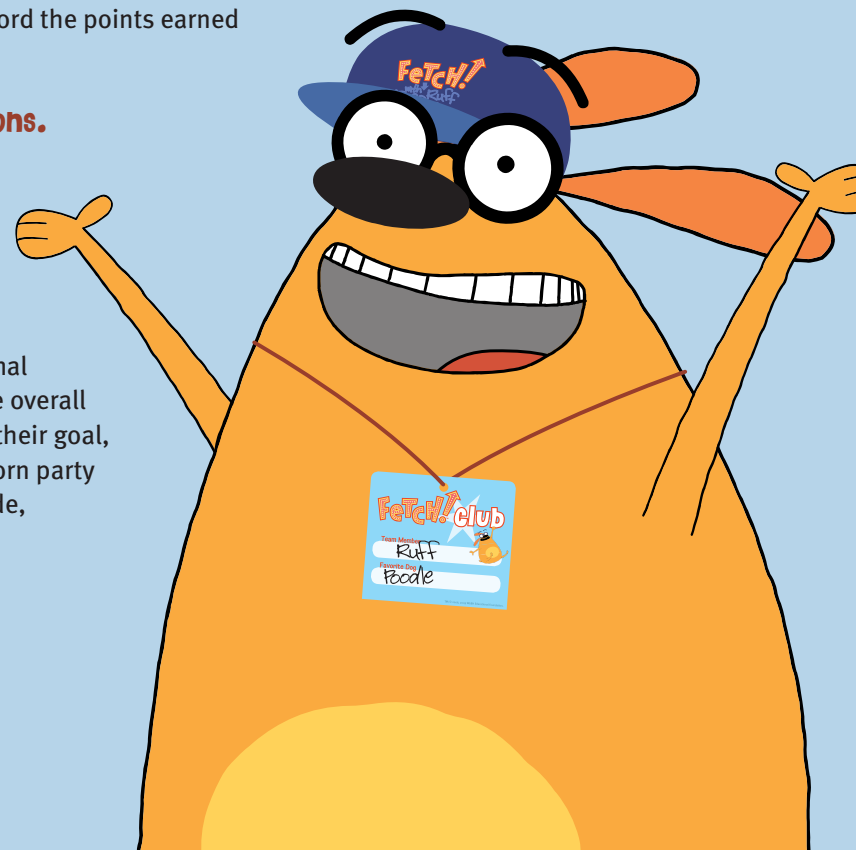
Grand Total. Establish a grand total of points for kids to reach by the last session of the club. This formula works well: (5 questions per session) x (50 points each) x (number of sessions) = perfect score for FETCH! Club members. (For a realistic goal that every group of kids can reach, you can subtract 50 points per session.)

Stickers. Find stickers that kids can put on their membership cards after each session. On the line below the sticker, have them record the points earned that day.

Bulletin Board Decorations.

Decorate a bulletin board to share what kids are doing in the club. Post photos, activity sheets, and samples of what the kids have made.

Party and Prize! At the final FETCH! Club meeting, tally up the overall points kids earned. If they meet their goal, offer them a grand prize (a popcorn party and screening of a FETCH! episode, for example).



Fetch! club Membership cards

To make membership cards, photocopy this page. (Make color copies, if possible.) Then cut out the cards and fold them in half on the dotted line. Punch out the hole and attach a string so kids can wear their cards during club meetings.

At the end of the meeting, give kids an attendance sticker to put in the grid on the back of the card. Choose your own stickers or use 3/4-inch round stickers, available at office supply stores. Have kids write the FETCH! points earned during that

session on the line below the sticker. Membership cards can get lost easily. Establish a place where kids can find them at the start of each meeting and return them when it's over.

✂

Fetch! club

Team Member _____

Favorite Dog _____

TM/© 2006, 2010 WGBH Educational Foundation.

Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE
Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE

Challenge • Scorecard

Fetch! club

Team Member _____

Favorite Dog _____

TM/© 2006, 2010 WGBH Educational Foundation.

Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE
Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE

Challenge • Scorecard

Fetch! club

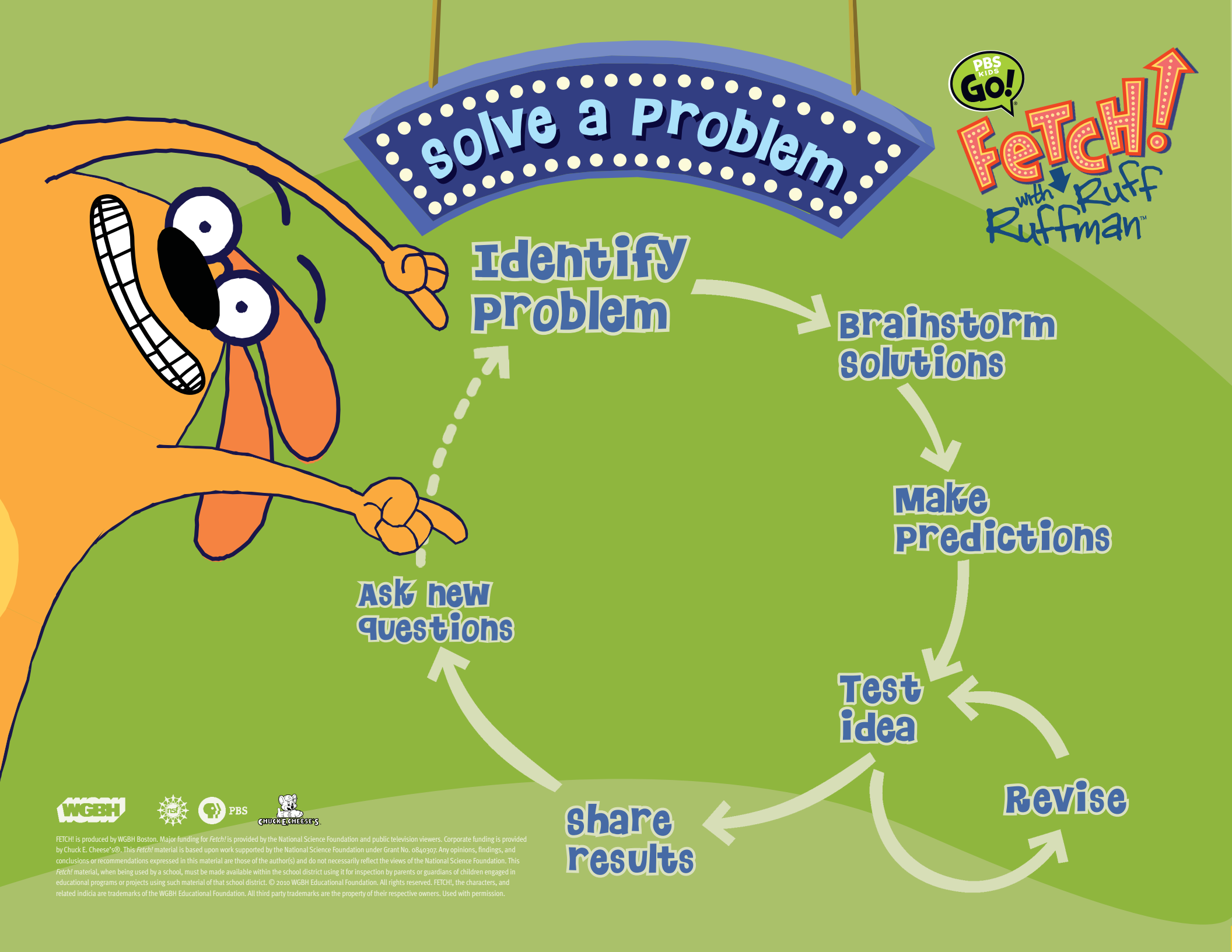
Team Member _____

Favorite Dog _____

TM/© 2006, 2010 WGBH Educational Foundation.

Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE
Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE	Points: _____ PLACE STICKER HERE

Challenge • Scorecard



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GOOOO FETCH!

Fetch!!
with
Ruff Ruffman™

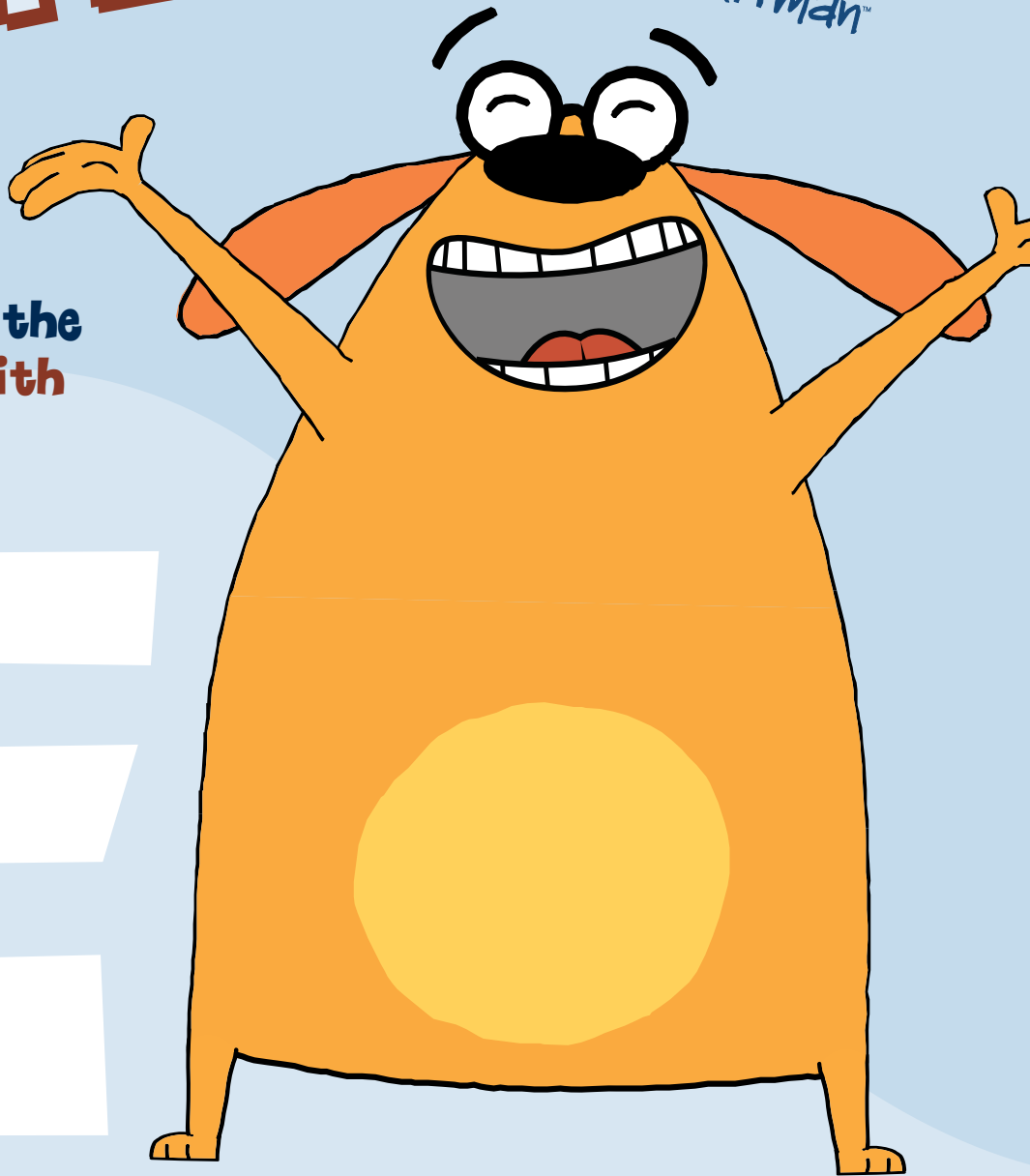
Join us for fun
science activities,
just like those on the
PBS show **FETCH! With
Ruff Ruffman!**

Who?

When?

Where?

More Info



Watch **FETCH!** on **PBS KIDS GO!**
(check local listings) and visit the
FETCH! Web site at pbskidsgo.org/fetch



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Fetch!

with Ruff Ruffman™

congratulates

For doing a **fantastic** job on your challenges at the **Fetch! Club**.
You're **talented, brilliant, and totally awesome!!!**

Ruff 

Your Fabulous Canine Host



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Cooperative

check out these other PBS and WGBH resources.



Ages 3-6

Celebrate the curiosity and adventure of young children with simple science explorations.

peepandthebigwideworld.org



Ages 3-6

Discover science, engineering, and math along with Curious George.

pbskids.org/curiousgeorge



Ages 8-11

Try ZOOM's fun science and engineering activities, featuring ideas sent in by real kids.

pbskids.org/zoom



Ages 9-12

Investigate environmental issues and take action to protect the planet.

pbskids.org/greens



Ages 9-13

Unleash your kids' ingenuity and get them thinking like engineers through hands-on activities.

pbskids.org/designsquad



Ages 11 and up

Dig deep into science topics with classroom-ready resources from the most-watched science television series on PBS.

pbs.org/nova/teachers



Ages 14 and up

Check out this career site for teen girls who believe in the potential of computing to build a better world.

dotdiva.org



Ages 14-18

Meet inspiring women engineers who make a real difference in the world. Find out if engineering might be your dream job.

engineeryourlife.org



Educators

Use this media-rich library of teaching resources to make concepts come alive in engaging and interactive ways.

teachersdomain.org